Bad science is dangerous for your health


To what extent are placebo effects real, common, and quantifiable? Placebos are simple chemicals not known to have any significant physiological or therapeutic effects—but packaged as though they do. In the design of clinical trials, they are often used as a base-line control for the testing of new drugs or therapies (although it is true, as pointed out in this book, that more appropriate controls would be those medications or therapies that are the best available to date).

Ben Goldacre believes, in the light of admittedly impressive evidence presented in a key chapter, that placebo effects are powerful and important. He examines ethical concerns associated with the deliberate use of placebos in mainstream treatment approaches, as well as the risks to the public of having charlatans (who are good at maximising placebo effects) mixing their real messages with self-serving false ones. But these are not the central issues and this leaves him with several unresolved interpretations and unsatisfactory explanations. As a result, his main ‘bad science’ thesis is effectively diluted—readers may end up wondering if the shenanigans of the faith-based health industry are really so injurious, if induced faith alone is half the battle in countering the unpleasant symptoms of many illnesses.

Goldacre is a 34-year-old British doctor and broadcaster who writes the regular ‘Bad Science’ column in The Guardian. His book is very wittily, forcefully and convincingly written. He is a missionary for straight thinking—the book is, amongst other things, a beautifully articulated and clear primer on the basic statistics used in well-executed clinical trials.

And he does not scruple to look for, find and follow up on cupboard-sequusted skeletons, including a number that have been exposed in the law courts. In particular, he goes for the jugular of super-rich, pill-purveying ‘experts’ with shady qualifications, who he thinks have succeeded in enslaving the media and the gullible public on matters of health and safety.

Bad Science is both an excellent read, and an important public contribution that should be required reading for newspaper editors, science journalists, health educators, and pharmaceutical executives.

Goldacre examines a number of illustrative, high-profile health stories of the recent period. These include officially promoted ‘brain gym’ sessions in U.K. schools based on highly improbable mechanisms of induced brain oxygenation; wonder-working cosmetics; and fish-oil pills to make schoolchildren cleverer en masse. Most damaging of all have been unverified, yet successfully contested, claims of a causal connection between mass vaccination and autism. These have already lowered vaccination uptake rates sufficiently to have increased the prevalence of some serious childhood infectious diseases, such as mumps and measles.

Goldacre has a very poor opinion of the kinds of ‘science journalism’ practised by the mass media in which he detects conspiracies involving journalists whom he believes to be ignorant of science, on the one hand, and industry, particularly Big Pharma, on the other. He believes this has resulted from the prohibition in the U.K. and elsewhere of direct advertising by drug companies, which has led to sometimes corrupt, indirect approaches to journalists. These result in apparently well-researched but often ‘gushing’ and uncritical narrative reports on the dramatic efficacy of the drugs in question. This is a very serious charge, and not one that newspaper editors will relish. South African newspaper editors will surely want to reassure the local public that no such practices are permitted here.

Another local stakeholder which will want to reassure us is the pharmaceutical industry, the subject of another chapter entitled ‘Is Mainstream Medicine Evil?’ Goldacre pulls no punches in analysing the ways in which hard-pressed drug executives create the conditions under which many of their new super-pills will sell as blockbusters. This is not pleasant stuff, especially combined with the preceding notions of media collusion and general public brain-washing. Even the scholarly professional literature is sullied, according to Goldacre, by the apparently frequent omission (non-publication) of studies reporting negative results.

Goldacre reminds me of Richard Dawkins, in being a very bright, sharp-tongued writer with a well thought-out axe to grind. In The God Delusion, Dawkins ended with a rather fuzzy hypothesis in which he posits that (near-universal) religious tendencies have emerged as a by-product of mental capacities which have evolved under natural selection. Here Goldacre marvellously builds a convincing case for evidence-based health care, shows us that ordinary people can readily understand its basic principles, and then allows his treatment of the placebo effect to complexify an otherwise clear-cut situation. Perhaps they are both right in their interpretations, but this particular reader has been distracted from the main messages in both cases. One message that certainly mustn’t be lost is that lame and unclear expositions of evidence-based conclusions concerning disease prevention and personal health promotion are dangerous.

They open up the extensive space filled by the modern equivalents of snake-oil salespersons, whose domain and profitability has been greatly enhanced by the vast reach and questionable ethics of modern media.

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Interviewing a master human biologist


Phillip Tobias is very much a South African anthropological icon. It is not simply his contribution to the academic study of human origins that has placed him in this position, but also the force of his personality and the sheer size of his contribution to knowledge. I haven’t had a chance to peruse his curriculum vitae recently, but at my last count he had produced over 1 300 publications—a total very few academics anywhere in the world could match. And his pen continues to write at an age when most of us would have accepted the tranquility of retirement.

Goran Štrkalj and Jane Dugard have now given us another perspective on his career in their transcription of a series of taped interviews with Tobias. With the exception of a very brief introduction, the words belong to Tobias and all the editors have done is to put his musings into thematic order. In his introductory chapter, Strkalj reminds us that taped interviews are not the same as an autobiography. The
text is truly a conversation, less structured than thoughts written down, more spontaneous and often meandering. One would think this was a recipe for disaster, but it works exceptionally well. The interviewers simply triggered Tobias off on a given topic, and the result is this book with almost no editing. I could almost hear Tobias’ voice as I read through the passages.

A small bugbear for me was the lack of dates on the interview transcriptions. Since they were recorded over a period of six years, it would have been useful to know in what year a particular interview took place.

Very early in the interviews, Tobias tells us that he finds it ‘hard to write about myself’. Perhaps this was Phillip being modest, as there is no shortage of Tobias’ thoughts on paper elsewhere. Not only are there several published interviews out there,1,2 but there are also transcriptions of public lectures3 and even films with his sonorous voice talking about himself.4 Not only that, but he has been sending out long Christmas letters to his friends and colleagues for years. Some of these run to 10 pages or more—all about where he had been in the previous year and whom he had met. There is no shortage of biographical information on Phillip.

So why is this particular version worth reading? Tobias is busy writing up the second volume of his autobiography, so by necessity there is a significant overlap between what he has published5 and the contents of this book. The interviews and the autobiography were completely separate, but the interviews did help Tobias refresh his memory for the autobiographical writing. Yet there are significant differences that make this version valuable. Tobias’s first clash with the irascible Solly Zuckerman happened at a conference in 1955 and is covered both here and in his autobiography. The two versions cover the same ground, but the taped version gives us much more of the feeling of what it was like for a youngster to publically challenge one of the most difficult and sharp-tongued individuals in the history of physical anthropology. The conversation format also allows Tobias to go into anecdotal mode. He gives us his impression of his own students (me included). Tobias does not like to speak badly of people, but the gentle chiding of his students gives us some idea of the relationship between student and supervisor.

Tobias’ love of words and their origins comes through frequently. Some years ago he was a guest for dinner at our house in Cape Town and the conversation got around to Latin. He went on about how useful and important his high school Latin had turned out to have been for him. I told him (perhaps a bit injudiciously) that when I was offered the choice between Latin and typing in high school, I chose typing. I don’t think he was impressed when I suggested that typing might be more useful than Latin in this age of computers, but I think he eventually forgave me.

I may be ignorant of Latin verbs, but I can still type faster than I can write.

This book, along with Tobias’ rich body of writing, forms an archive of personal views that will be fodder for future historians of science in South Africa. History is not an easy subject to write. The facts of the past are only one part of the material that is needed to paint a picture of what happened ‘way back when’. The context is critical and we need time to fully appreciate the roots that give rise to the present. Tobias has left us with a legacy of his writings and his thoughts that will help us to place his work in context. But despite my emphasis on this book’s historical importance, I do recommend that you read it simply for the joy of discovering this life in science. Tobias’ enquiring mind and extraordinary memory comes through marvellously in these conversations and they are a pleasure to experience.


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